GPS DRIVEN ARCHITECTURE FOR DELIVERY OF LOCATION BASED MULTIMEDIA AND METHOD OF USE

FIELD OF THE INVENTION

The invention generally relates to an architecture and method of use for providing location based multimedia to participants and, in particular, to an architecture and method of use for providing location based multimedia to participants of a geo-tour or other application using geo-boundaries and/or other location information.

BACKGROUND

Faced with an increasingly difficult challenge in growing both average revenue per user (ARPU) and numbers of subscribers, wireless carriers are trying to develop a host of new products, services, and business models based on data services. One such service is location services, which provide information specific to a location including actual locations of a user. It is expected that location based services will generate additional business for the carrier, from both the mobile user and content providers.

For the mobile user as well as the service provider, location-based services offer many opportunities. For example, location-based services can increase revenue of the service provider, e.g., network carrier, while improving services to end users, e.g., mobile users. Some examples of location-based services that can be provided to the mobile user include:

- Providing the nearest business or service, such as an ATM or restaurant;
- Providing alerts, such as notification of a sale on gas or warning of a traffic jam; and
- Providing weather reports which are germane to the location where the user is using the mobile device, etc.

For the network carrier, location-based services provide value add by enabling services such as:

- Resource tracking with dynamic distribution (e.g., taxis, service people, rental equipment, doctors, fleet scheduling, etc.);
- Finding people or information for the user (e.g., person by skill (doctor), business directory, navigation, weather, traffic, room schedules, stolen phone, emergency 911);
- Proximity-based notification (push or pull) (e.g., targeted advertising, buddy list, common profile matching (dating), automatic airport check-in); and
- Proximity-based actuation (push or pull) (e.g., payment based upon proximity (EZ pass, toll watch).

Two methods are commonly in use to determine the location of a wireless device with a third method starting to become more popular. However, the methods do not adequately address many of the issues required to provide services. These methods include signal strength of cell towers that are near the wireless device (e.g., triangulation); GPS triangulation; and exposing the LBS as a web service.

The first method determines a wireless device's location by comparing the signal strength of cell towers that are near the wireless device. This method is called triangulation and is substantially the same method that GPS devices use to determine their location. The difference between cell triangulation and GPS triangulation, though, is the signals they use to determine location. The second method, GPS triangulation, uses satellites to determine a device location. In either case, the latitude and longitude are kept in the infrastructure of the location services.

Another method includes creating location based services by exposing the LBS as a web service. For example, when a device wants an update from the location-based system, it sends a request with the proper authentication credentials and a unique identifier that describes the device that is being tracked. The LBS returns the coordinates of the device being queried.

SUMMARY

In a first aspect of the invention, a method comprises detecting when a user has crossed within a geo-boundary. The method further comprises determining a content type to be sent to a mobile device of the user based on preferences provided by the user. Additionally, the method comprises sending user location specific content of the determined content type to the mobile device when the user has crossed within the geo-boundary.

In another aspect of the invention, a computer program product comprising a computer usable storage medium having readable program code tangibly embodied in the medium is provided. The computer program product comprises: first program instructions to receive preference information of a mobile device; second program instructions to receive a notification when the mobile device has crossed within a geo-boundary; third program instructions to check capabilities of the mobile device and transform location specific content to be compatible with the mobile device based on the checked capabilities; and fourth program instructions to send the location specific and compatible content to the mobile device based on the preference information and the check. The location specific and compatible content is associated with a detected location of the mobile device within the geo-boundary.

In another aspect of the invention, a method is provided for sending location information to one or more mobile devices. The method comprises providing a computer infrastructure being operable to: receive and store preference information of a mobile device; check content compatibility of the mobile device with content specific to a location of the mobile device; transform the content specific to the location of the mobile device when not compatible with the mobile device; and send the content specific to the location of the mobile device to the mobile device when the mobile device is detected to have crossed within a geo-boundary.

In yet another aspect of the invention, a system comprises a management system configured to register one or more mobile devices with a location based service and further configured to obtain and store preferences and other information related to the one or more mobile devices. The system further comprises a media service configured to be notified of the preferences so as to provide relevant location based content to the one or more mobile devices when any of the one or more mobile devices cross within a defined geo-boundary. The media service is further configured to perform transformations of the content so as to be compatible with the one or more mobile devices.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

The present invention is described in the detailed description which follows, in reference to the noted plurality of drawings by way of non-limiting examples of exemplary embodiments of the present invention.

FIG. **1** shows an illustrative environment for implementing processes in accordance with the invention;